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FOOD NEWS

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FOR CONSUMERS

Volume 8 Number 1 Spring 1991

United States Department of Agriculture
Food Safety and Inspection Service



**DO THE WHYS
OF SAFE FOOD
HANDLING
HAVE YOU IN
A SPIN?**

FOOD NEWS

FOR CONSUMERS

Spring 1991
Vol. 8, No.1

Food News for Consumers is published by USDA's Food Safety and Inspection Service, the agency charged with ensuring the safety, wholesomeness and proper labeling of the nation's meat and poultry supply. The magazine reports how FSIS acts to protect public safety, covering research findings and regulatory efforts important in understanding how the agency works and how consumers can protect themselves against foodborne illness.

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Answering the "Whys" of Safe Food Handling

A Message from Ann Collins Chadwick, USDA's Consumer Advisor

There's a long history in my family of answering "why" questions. I have vivid memories of my brother following Father around the farm when we were growing up. Not yet school age, Russell would pester him with questions all through the daily chores. Finally, one day Father stopped dead in his tracks, turned to his young inquisitor and bellowed, "Why? Why? I'm sick of answering why!"

I knew how he felt years later as I parried my daughter's constant questions. "Why do I have to put the milk back in the refrigerator? Why do we have to debone the chicken?"

While feeling as frustrated as Father had, I realized her curiosity involved important safe food handling practices I wanted her to learn. If only I can explain the answers so she'll understand, I thought, she'll be more likely to do what I say.

I try to apply the same approach to answering the questions consumers have and strengthening their motivation today in my work as USDA's Consumer Advisor. In fact, it's critical to find good answers to the "why" questions adults ask, because when adults feel concerned enough to want reasons, they are *very* concerned with the matter.

Recognizing that many consumers now want more in-depth information on safe food handling, this issue of *Food News* is designed to explain the "whys" behind USDA's basic food safety recommendations. Hopefully if they understand why safe food handling rules are necessary, consumers will more readily adopt them. That, of course, could add up to a marked improvement in public health.

Please let us know if this "why" issue is helpful, and feel free to continue to ask your "why" questions. We know how important they are.



A home economist with a master's degree in nutrition and food science, Ms. Chadwick's career began in research and development and consumer affairs in the food industry. She set up the department of consumer affairs at Hormel & Company. She assumed her present post as USDA's Consumer Advisor in 1983.

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HOTLINE CALLING...

The "Whys" Behind Spring Food Handling Rules

by Susan Templin



here are some foods you just naturally think of when you think of spring!

Delicious hams—country, fresh or canned, eggs—hardcooked and dyed or whipped into beautiful meringue baskets, corned beef on St. Patrick's Day, and briskets—hot and spicy for any gathering.

But did you ever stop to think that the way you handled those colorful eggs, that succulent ham or other foods could lead to foodborne illness?

Our callers to the USDA Meat and Poultry Hotline have, and many question "why" when given handling advice. To learn why special care is needed when preparing for spring festivities, listen in on a few Hotline calls.

Q. Why do some canned hams need refrigeration? Most canned foods don't.

A. Whether or not a food product requires refrigeration to keep it safe depends on how the food was processed.

Most canned foods, like fruits and vegetables, have been heated to temperatures high enough to kill bacteria that cause both illness and spoilage. Small canned hams, usually less than one pound, have been processed in this way. These, like most canned foods, do not require refrigeration.

Other foods, like milk and larger canned hams that require refrigeration, are pasteurized. That means they are heated to temperatures high enough to kill pathogenic bacteria, but not other bacteria that can cause food to spoil over time. These foods are not heated to higher levels because the higher heat treatment changes the flavor and quality.

Canned hams with a "Keep Refrigerated" label should be stored in the refrigerator or they will sour very quickly.

Q. Recently, a chef on TV stated that it is now safe to eat pork rare. "Serve pork juicy and still pink," he said. I've always thought pork must be well done to be safe. What has happened to change the cooking advice?

A. It is true that in past years a higher final internal temperature was recommended for fresh pork products. The concern centered on the trichina parasite sometimes found in pork.

Trichina levels in pork products have been reduced considerably in recent years due to efforts by USDA and the industry. But you must still cook pork, and all other raw meat and poultry products, to an internal temperature high enough to kill bac-



teria that may be in the raw food.

For optimal safety all meat and poultry products should be cooked to an internal temperature of 160° F. For pork, that is medium, and still quite juicy! If you prefer pork well done, cook it to 170° F.

Q. *Recently, when purchasing corned beef I noticed that some brands had a sell-by date on the label, and some had use-by dates. The time spans were quite different. What exactly do these dates mean?*

A. Although many products bear sell-by or use-by dates, product dating is not a federal requirement. The dates are placed on the labels by either the processor or the retailer.

A use-by date on a package is a reliable guide to the shopper. It indicates a safe time frame for home use of the product, if it is properly stored.

A sell-by date is an indication to the retailer as to how long a product should be out for sale. It is legal in most states to sell product beyond the sell-by date, if the product is still wholesome.

If you buy a product with a sell-by date, use it within a few days of purchase for best quality and safety regardless of the date.

Q. *There are many recipes for Easter bread that feature a dyed, cooked egg braided in the center of the loaf. It looks great, but is that egg safe when left out for days?*

A. This is one egg that should be considered a decoration only! If perishable food such as meat or eggs sit out at room temperature more than two hours, harmful bacteria can

grow and multiply. These bacteria, if consumed, can cause illness.

While thorough cooking does kill many bacteria, like salmonella, that could have been in the raw egg, other pathogens could be introduced to the egg during dying, cooking and handling.

Refrigerate hardcooked eggs that you plan to eat. They'll keep about a week. When staging an egg hunt, remember the two hour rule!

Q. *When preparing for spring holiday meals, I like to cook ahead. But I've always heard that it is dangerous to freeze foods with mayonnaise, like chicken salad. Is mayonnaise the problem?*

A. Basically, with chicken salad, as with most foods, there are safety issues and quality issues. It's not dangerous, from a safety standpoint, to freeze chicken salad. It's just not wise because when mayonnaise is frozen, the consistency changes and becomes watery.

So, when considering freezing foods that contain mayonnaise, know that the food will be safe, but the quality will not be as good.

Try freezing the salad ingredients mixed with a little vegetable oil, and add the mayonnaise later when preparing to serve.

Q. *I saw a recipe for a dessert basket made from a baked egg white meringue. Why would this food be safe to eat, but the meringue on a pie might not?*

A. There is some concern that *Salmonella enteritidis* may be in the whites of eggs as well as the yolks.

Care must be taken when preparing meringues using raw egg whites.

Baskets made from meringue that have been heated and air-dried would be safe if all the moisture has been depleted by drying.

Meringues on a pie are safe if heated in a 350° F oven for at least 20 minutes, and the temperature in the center of the meringue has reached 160° F.

There are also powdered egg white products on the market. These products have been pasteurized, and are safe to use for meringue recipes.

Q. *Cooking directions on a piece of beef brisket that I will prepare for our Seder meal suggested that it be cooked at 275° F for many hours. Is so low an oven temperature risky?*

A. For optimal safety, we recommend an oven temperature no lower than 325° F. It may take too long for food to reach a safe internal temperature, one that will kill harmful bacteria, when it's cooked at a lower setting.

Brisket does require a longer cooking time for tenderness and quality. Perhaps cooking the brisket in a crock-pot would be a safe alternative.

Cut the meat into uniform sized pieces, fill the pot up to 2/3 full with sauce, and cook on a low setting until the meat reaches at least 160° F and is tender.

Crock-pot cooking is safe at the lower temperature because the heat is contained in the pot and the liquid provides a steamy atmosphere lethal to bacteria. *





Why Immune System Problems Raise the Risk of Foodborne Illness

by Dianne Durant

Picture this: A criminal invades a town, threatening its safety. But before he can do any damage, he's surrounded by police and then hauled off and confined in the local jail.

According to some medical experts, that's a good description of how the human immune system works. It also explains why, when the immune system is weak, people are more vulnerable to invaders like bacteria that can cause foodborne illness.

For those with a weak immune system—pregnant women and very young children, the elderly and people with chronic illnesses—foodborne disease can pose a serious threat to health.

For this reason, USDA's Food Safety and Inspection Service launched an education campaign last year to tell these susceptible people about their risks and how to protect

themselves.

However, while many people may realize they face special risks, few really understand why.

How Does the Immune System Work?

What weakens a person's immunity?

The immune system is one of the most important mechanisms for fighting disease and preserving health. Humans have two types of cells that fight invading bacteria and viruses, also known as *antigens*.

T cells are white blood cells. They travel through the bloodstream. When they reach some invading antigens, they attack them.

B cells are white blood cells that produce proteins called *antibodies*. These antibodies bind to the invading antigens and help prevent them from doing damage.

One thing that makes the immune system unique is "memory."

Once the body has fought off a particular type of antigen, the body remembers for years, sometimes for life. When that same antigen infects the body again, the immune system often recognizes and attacks it before an infection can even occur. That's why childhood diseases are frequently just that.

Why Very Young Children and Pregnant Women Are More Vulnerable

Children must be vaccinated against an illness or actually contract it before their immune systems develop the memory to counteract that particular invader.

Pregnant women need to know that the unborn child is especially vulnerable too.

While the fetus has some immunities lent by the mother's blood, its immune system is immature and vulnerable. In rare instances, some types of foodborne disease can even cause miscarriage or stillbirth.

After birth, antibodies from the mother are with the child for a few months. As these are lost, the child becomes more vulnerable.

Why Older People Are Vulnerable

Older people may have a weakened immune system for any number of reasons.

Poor nutrition can be a factor.

As people grow older they sometimes lose some sense of smell and taste. As a result, appetites may decrease and vitamin deficiencies increase.

Why is that important? Clinical and animal studies show that dietary components such as protein and vitamins A, D, C and B complex are necessary for healthy immune responses.

Another risk factor for older people is poor blood circulation. That can increase risks because cells from the immune system are carried through the blood. If the blood has trouble reaching the site of an infection, it may go unchecked.

Why the Chronically Ill Are At Risk

Poor blood circulation may also increase infection risks for some people with chronic illness.

Diabetics, many of whom are also elderly, may be vulnerable because they may suffer from poor blood circulation. Diabetics may be vulnerable for another reason too—high levels of sugar in their blood. Blood with a high sugar level may serve as a better growth media for bacteria.

People with *digestive problems* that require them to take antacids are also vulnerable. Acid in the stomach often kills bacteria before they even reach the intestine. Reduce acid and you create a favorable environment for bacteria.

Even people who are taking antibiotics may find they are more vulnerable. The normal intestine has millions of good bacteria. Antibiotics can kill them off, so invading pathogens can more easily gain a foothold.

The bottom line is many different types of people may have a vulnerable immune system and need to take special care to prevent illness that could be caused by mishandling food.

Keys to Preventing Foodborne Illness

Microbiological organisms are everywhere—on our skin, in dirt, on surfaces we touch, and in perishable foods like meat, poultry, fish, eggs and dairy products. But safe food handling can greatly reduce the risk of illness from harmful organisms.

There are three keys to safe food handling:

- 1) Cook food thoroughly to destroy harmful bacteria.
- 2) Avoid "cross contamination" by washing anything that touches raw meat or poultry with hot, soapy water (that includes your hands, counters, utensils and cutting boards).
- 3) And never, never eat anything raw, including raw eggs or seafood. *

Health Organizations Can Help Spread the At-Risk Message

Since USDA's Food Safety and Inspection Service (FSIS) launched its educational campaign last spring, more than 40 million Americans have heard that certain people face special risks from foodborne illness.

How can your health organization help? As Joe Carlin, a nutritionist with the Administration on Aging (AOA) says, "FSIS has put all the materials together so all you have to do is copy and go."

The Administration on Aging, part of the U.S. Department of Health and Human Services, provides more than 270 million meals to the elderly each year. In support of the FSIS campaign, AOA distributed the FSIS safe food handling kit to more than 1,600 cooperators.

For a sample copy of the FSIS booklet, "Is Someone You Know At Risk for Foodborne Illness?" write USDA/FSIS-Public Awareness, Rm. 1165 South, 12th & Independence, Washington, D.C. 20250.





A BRIEF HISTORY OF FOOD PRESERVATION

*and FSIS Efforts to Protect
Meat and Poultry*

by Mary Ann Parmley

In the long history of food preservation—the original need was to preserve food in times of plenty for future want—some methods have clearly worked better than others.

The ancient Roman purveyors to the Caesars apparently knew what they were doing with fruits and preserves. The 19th-century excavators of Pompeii, destroyed in A.D. 79, found jars of fruit still preserved in honey.

But when Britain's royal navy, intent on preventing scurvy, introduced a "portable soup" in the 1750s, a bouillon cake made from cattle parts, sailors had to be "flogged to whet their appetites" for it. (Thorne's *History*, see Further Reading.)

Still, by the mid-19th century, many of today's food preservation techniques had been developed and were in use.

Moving to Modern Methods

Canning. Modern canning techniques, which preserve food by heat-killing almost all microbial contaminants present, owe their beginnings to the ingenious French confectioner Nicholas Appert. In Monsieur Appert's day, Napoleon's armies desperately needed durable food stores. Thus the French government offered a bonus to anyone who could help. In 1810, Appert won the prize with his new method of preserving foods by cooking and then reheating them in sealed glass jars. Appert didn't know it, but he had invented canning!

The British navy, which needed *unbreakable* canned goods for sea voyages, spurred the development of

tinned cans. So by the time of our own Civil War, the 1860s, tinned goods were a booming industry in the U.S. too.

Refrigeration. By the early 1800s, technology had advanced sufficiently that refrigeration could be developed. However, in the U.S., the first refrigerators were largely restricted to commercial use until the 1930s and 1940s when they made their debut in American homes.

Refrigeration, of course, greatly extends food's useful life by slowing microbial growth that can lead to spoilage and foodborne illness.

Freezing. Ice cream lovers should note that the first large-scale frozen food operation in this country was an ice cream factory in Baltimore, Md., about 1850.

Freezing, as most readers know, is a critical food preservation method since freezing stops microbial growth, keeping food safe for indefinite periods of time.

By the 1880s, fish were being frozen for export, and in 1923 Clarence Birdseye, from Gloucester, Mass., was introducing a wide range of frozen foods for the home.



Frozen foods became even more popular in World War II, because army needs removed many tinned and dried foods from consumers, and frozen foods, packaged in paper, did not take so many ration stamps.

Meanwhile in Microbiology

While the science of food preservation moved right along in the 18th and 19th centuries, microbiology—the study of organisms not visible to the naked eye and the basis of modern food protection—didn't really take off until the late 19th and early 20th century.

Of course, there were earlier breakthroughs. Botulinum poisoning was tied to illness from eating sausage in Germany in 1735—*botulus* is Latin for sausage. By the 1850s, sanitarians knew that cholera and typhoid fever spread through milk and water.

But not until the early 1900s did new U.S. pure food and drug laws set up mechanisms for protecting the food supply and tracking outbreaks of foodborne illness.

Meat and Poultry Inspection

By 1906, pushed by expose's of meat packing plant filth, the U.S. had the Federal Meat Inspection Act, and, by 1957, the Poultry Products Inspection Act.

In the early days, meat and poultry inspection had a different emphasis than it does now. Very early the intent was to ensure wholesome products for export. Another aspect was eliminating animal disease so that healthy animals could provide wholesome products.

Today USDA's Food Safety and Inspection Service (FSIS), which regulates meat and poultry products, is increasingly concerned with "invisible" hazards in meat and poultry like bacterial contamination and chemical residues.

Why did this shift occur? In the 1950s and 60s, scientists found that many agricultural chemicals and animal drugs that were producing bumper crops and healthier animals also had disadvantages. They could leave potentially dangerous residues in

food. Therefore, today, residue testing of food animals is a big part of the FSIS inspection picture, totalling some 2 million assays annually.

The period since the 1970s has also seen a phenomenal rise in the number of pathogens recognized as capable of transmitting human illness through food. *Campylobacter jejuni*, *Yersinia enterocolitica*, *E. coli* O157-H7, *Vibrio cholerae*, *Listeria monocytogenes* and the Norwalk virus were identified as foodborne pathogens, to name a few.

Consequently, FSIS has more than tripled microbiological testing in its inspection operations.

Further, as salmonella bacteria proved a growing problem, FSIS has begun a number of ambitious control projects. Much of the effort is in slaughter and processing plants, but FSIS is also focusing on keeping salmonella out of live animals before they reach the plants.

Recently *Listeria monocytogenes* (*L.m.*) has shown that it can grow under refrigeration and cause serious problems in vulnerable people. Hence FSIS developed a new analytical test for *L.m.*, increased *L.m.* monitoring of meat and poultry products and set up a task force to develop tighter *L.m.* controls in plants.

Asked how future historians will

rate today's era in food protection, FSIS administrator Dr. Lester Crawford said, "Certainly the pace has quickened, but the historical cycle of progress and side-effect continues. New pathogens are identified and then we must find ways to keep them out of the food supply. There have been innovations in food packaging, but, there again, some methods—such as modified atmosphere packaging where gases other than oxygen are used—can encourage some pathogen growth if products aren't quite carefully handled."

Trying to ensure a safe food supply, it seems, will probably always mean walking a tightrope between technology which reveals new pathogens and that which can be developed to control them. ✱

Further Reading:

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- Foster, E.M. - "A Half Century of Food Microbiology." *Food Technology*, 1989, v. 43:9, pp. 208-216.
- Labuza, T. and Sloan, A.E. - "Forces of Change—From Osiris to Open Dating." *Food Technology*, 1981, v. 35:7, pp. 34-43.

The Man Who Identified Salmonella

*In 1894 Dr. Theobald Smith, a researcher under Dr. Daniel E. Salmon in USDA's Bureau of Animal Industry, was the first American to identify salmonella as a separate strain or genus.**

In those days, few Americans had even heard of salmonella, which today is very nearly the only common form of foodborne bacteria people know by name.

If Smith isolated the bacteria, why is it named for Salmon? "Smith made the identification," said Dr. Alice Moran, a retired USDA microbiologist, "but Salmon's name as administrator came first on their paper. So the new bacteria was named for Salmon."

**Bergey's Manual of Systematic Bacteriology, 1984.*



Why the Experts Say



by CiCi Williamson

Certain foods—like meat, poultry, fish and eggs—are not sterile when you buy them at the supermarket, and must be properly stored and cooked before eating.

Let's look first at why this is true for meat and poultry, the animal foods regulated by USDA's Food Safety and Inspection Service (FSIS).

You're driving in the country when a farm scene appears—a red barn, cows are grazing, chickens mill around their lot. That's what *you* see.

A microbiologist, a scientist who studies life under the microscope,

sees something else. Bacteria live on the chicken feathers, foodborne pathogens are on animal hides and millions of microorganisms swarm in the soil.

Although the greatest care is taken in processing to remove bacteria from meat and poultry, it is virtually impossible to produce a sterile product.

And once they leave the plant, meat and poultry products are no longer under direct FSIS jurisdiction.

Companies that transport, store and sell the products must then ensure that they stay clean and properly refrigerated.

So, while every effort is being made to ensure consumers get the safest products possible, it's still important to know how to handle meat and poultry safely.

Meat and Poultry Care

Refrigerate raw meat and poultry no longer than two days before cooking or freezing for later use.

Handle these raw items carefully to prevent cross contamination of other ingredients, utensils and counters. Rinse poultry under cool running water; blot red meats with paper towels. Throw away packaging materials.

Wash implements immediately with detergent and hot water. Sanitize cutting boards and counter with a solution of 2 teaspoons of bleach in a quart of water. Some bacteria, salmonella for instance, can live in a dried state on surfaces and become re-activated later when moistened.

Cook beef, veal, lamb and pork to an internal temperature of 160° F. New FSIS safeguards in swine raising and pork processing mean pork no longer needs to be cooked to 170° F unless you want it well-done.

While poultry would be technically "safe" cooked to an internal temperature of 160° F, most people wouldn't like the taste or texture. Cook whole poultry to an internal temperature of 180° F.; poultry breasts to 170° F.

The Food Safety and Inspection Service does not regulate seafood or eggs, but FSIS's Meat and Poultry Hotline hears many consumer ques-

Microbiological Monitoring of Meat & Poultry for Safer Products

The USDA's Food Safety and Inspection Service continually monitors for any microbiological hazards in meat and poultry products. Inspectors in both slaughter and processing plants sample products.

The samples are tested in FSIS laboratories for bacteria such as salmonella and listeria. In a typical year, the food microbiologists of the FSIS laboratories perform some 33,000 bacterial tests on meat and poultry.

After products leave the plant, FSIS compliance officers spot-check samples of meat and poultry products in warehouses, distribution centers, trucking companies and retail stores. Rarely does an unsafe product reach consumers. If one does, FSIS works with companies to quickly recall that product.

In 1990, a special two-year study was begun to monitor salmonella in raw chicken at the plant level. Chickens are analyzed periodically based on nationwide sampling. In a second study, FSIS microbiologists will compare the occurrence of salmonella in identical amounts of raw beef, pork, chicken and turkey ready to leave the plant.

tions on both products. So here, from that standpoint, are the microbial problems and safe handling advice for each.

Seafood

While improperly harvested tropical finfish can cause a disease called ciguatera intoxication that affects the nervous system and some improperly refrigerated fish can cause a milder disease called scombroid poisoning, finfish, by and large, pose a minor threat to most consumers.

Molluscan shellfish, on the other hand, are of greater concern since many people eat them raw. Clams, oysters, mussels and scallops are filter feeders that process large quantities of water in their quest for food and oxygen.

If shellfish are illegally harvested from polluted waters, disease-causing bacteria and viruses may be present in them. Buy seafood from a reputable source or catch fish in waters certified safe.

Always cook fish and shellfish adequately to render parasites and bacteria harmless. And store raw seafood in the refrigerator only 1 or 2 days before cooking or freezing.

Fresh Eggs

A few years ago, you could tell a potentially contaminated egg by its broken or dirty shell. Now a perfectly fine-looking egg may contain *Salmonella enteritidis*, a disease-causing bacteria.

Researchers think salmonella from the infected hen is being passed into the egg before the shell is formed to cover it. However, the Centers for Disease Control now estimates that only about 1 egg in 10,000 contains *S. enteritidis*.

Precautions? Cook both yolk and white until firm. Eggs used in baking and candy making should be safe. They reach temperatures above the 160° F needed to kill the bacteria.

Hardcooked eggs will keep a week in the refrigerator. Fresh eggs can be refrigerated 3 to 5 weeks. ❄

COOKING FOODS SAFELY

For safe cooking, never use an oven temperature below 325° F. When testing for doneness, insert meat thermometer or microwave temperature probe into the thickest part of meat or poultry away from bone or fat. Temperature-check microwaved foods after the standing time that completes their cooking.

	Cook to this internal temperature	Visual checks
Fresh meats		
Ground Meats (Veal, beef, lamb, pork)	160 degrees	No longer pink
Fresh Beef		
Rare (some bacterial risk)	140 degree	Red center
Medium	160 degrees	Pale pink center
Well Done	170 degrees	Grey or brown throughout
Fresh Lamb, Pork and Veal		
Medium	160 degrees	Pale pink center
Well Done	170 degrees	Not pink
Leftover cooked meats (to reheat)	165 degrees	Steaming hot
Poultry		
Chicken, Turkey, Duck & Geese, whole	180 degrees	Juices run clear, leg moves easily, tender
Poultry breasts, roasts	170 degrees	Clear juice, fork tender
Poultry thighs, wings		Cook until juices run clear.
Fully-cooked poultry; leftovers (to reheat)	Safe to eat cold if properly stored 165 degrees	Steaming hot.
Fish And Shellfish		
Fish, filleted and whole	160 degrees	Flesh is opaque, Flakes easily
Shellfish	160 degrees	Opaque, Steaming hot
Eggs		
Fresh		Both yolk and white firm
Egg-based sauces and custards	160 degrees	Sauces coat spoon, custards are firm
Pasteurized egg substitutes	Safe uncooked	Cook as desired

The WHYS Behind USDA's Food Safety Rules

Why are we giving you the "whys"? Because it's easier to follow a new procedure if you understand why it's necessary. Here is the scientific reasoning behind USDA's basic safe food handling rules.

Rule

Why



Keep it safe, refrigerate.

Refrigerate foods you'll use quickly. Freeze raw meat, poultry or fish you won't use in a couple of days.

Safe refrigerator temperatures of 40° F prevent most bacteria that cause foodborne illness from growing. Freezer temperatures of 0° F STOP bacterial growth.

Don't thaw food on the kitchen counter.

Thaw in the refrigerator or microwave.

Thawing proceeds from the outside in. So surface bacteria can multiply to disease-causing levels before food is thawed all the way through.



Wash hands before preparing food.

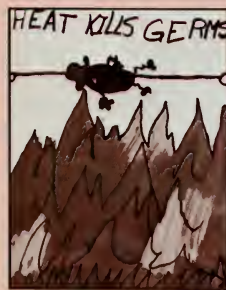
Wash hands and utensils again after contact with raw meat and poultry.

Hands carry amazing numbers of bacteria. So wash hands before food preparation and after handling raw meat or poultry. Raw meat or poultry may also carry bacteria, so it's important to clean any utensils or surfaces they contact.

Cook raw meat and fish to an internal temperature of 160° F.

Poultry should reach 180° for taste; juices should run clear. Fish should flake with a fork.

Hot cooking temperatures kill most bacteria found in raw food. Heat weakens the bacterial cell membrane, causing the contents to leak out. Continued heat destroys cell protein and other vital structures.



Promptly refrigerate or freeze leftovers.

Use small, shallow containers for quick cooling.

It's easier to keep bacteria from multiplying in cooked food in the refrigerator if you divide it into small containers. In several containers, more refrigerated air circulates around the food, enabling cold temperatures to reach the center so bacteria can't easily grow there.

Never leave perishable food out more than 2 hours

When foodborne bacteria have nutrients, moisture and warmth, they can double in number every 20 minutes. If you eat food with high numbers of bacteria, you can get sick. Normally, in less than 2 hours, bacteria don't reach dangerous levels.

Winning posters from
USDA's National Children's Food Safety Poster Contest, 1982-85, illustrate the basic rules

—Mary Ann Parmley and
Diane Vanlonkhuyzen

NEWSWIRES

Nutrition Labels Planned for Meat & Poultry Products

USDA's Food Safety and Inspection Service is working on plans to require nutrition information on meat and poultry labels.

"We think consumers deserve more nutrition information on labels so they can make choices which will help them follow a healthy diet," explains Margaret O'K. Glavin, FSIS Deputy Administrator for Regulatory Programs.

FSIS will propose that nutrition labeling be mandatory for processed meat and poultry products but voluntary on fresh and frozen products.

Nutrition labels for meat and poultry products are intended to be similar to those established by the Food and Drug Administration (FDA), which is developing nutrition labeling requirements for all other foods.

"We want consumers to have access to labels on all food products that are similar in format and share consistent information and definitions," adds Glavin.

Ms. Glavin admits meat and poultry present some unique challenges for nutrition labeling.

"For example, should we consider nutrition labeling only for processed products labeled at federally inspected plants?" she asks. "And should labeling information on raw products reflect the nutritional content of the food as purchased or once it has been cooked?"

It will take FSIS some time to reconcile these and other concerns. Consumers should not expect to see the new labels on grocery store shelves before mid-1993. This is also when new labels will appear on foods regulated by FDA.

—Marjorie Davidson

USDA's Meat and Poultry Hotline Marks Five Years of Consumer Service

After some 300,000 calls, what has the staff of USDA's Meat and Poultry Hotline discovered about the food safety concerns of the American consumer? This is a good time to consider that since the Hotline celebrated its fifth anniversary in 1990. The service became tollfree on July 1, 1985.

Five-Year Trends.

1. Many consumers are still confused about how to keep food safe. New audiences eager for food safety help,



such as those most at risk for foodborne illness, continue to be identified each year. Plus, the Hotline again and again has been asked to provide accurate, scientific information in the face of sporadic food safety "scares."

2. Though they may not know exactly how to protect themselves from illness, consumers are more concerned than ever about foodborne bacteria. More people have heard words like "salmonella" and "listeria," and the Hotline has helped them control these pathogens before illness resulted.

3. Consumer demand for convenient, easy-to-fix meals has changed the face of the American supermarket and the nature of Hotline calls. New products and new kinds of packaging abound. More and more, the Hotline clears up confusion regarding dating, labeling and storage of these new products.

Since 1985, the Hotline has played an important role in measuring consumer beliefs about food safety. The Hotline gives FSIS instant access to problems in the marketplace. Hotline data helps FSIS plan and carry out responsive educational programs.

The 1990 Report.

Last year was exciting in its own right—the Hotline received nearly 80,000 calls! In talking with the 38,700 consumers who called during business hours, the Hotline staff made these observations.

Individual consumers made up most of the Hotline's clientele. Business people led the list of other users—health professionals, the media, government, students and teachers.

Most callers asked how to handle, store and cook meat and poultry in a safe manner. Relatively few complaints were heard. Callers frequently made the very food handling mistakes identified by the Centers for Disease Control as factors in foodborne illness outbreaks—leaving foods too long at room temperature, cross-contaminating cooked foods, cooling large quantities improperly, or cooking insufficiently or at too low a temperature. Products asked about most often were turkey, chicken, eggs, beef and pork.

Microwave safety was a "hot" topic in 1990. Consumers were puzzled about cooking times, temperatures, and cookware/plastic wraps suitable for microwaving.

Traveling with food presented challenges. Warm weather brought food safety questions on picnics, barbecues and camping trips. In the fall, the focus shifted to packing safe lunches and "care packages" for college students, taking a holiday dinner to a relative's house and sending food gifts to faraway friends.

With the nation at war, last fall also saw a tremendous influx of calls on what kinds of foods families could safely send loved ones stationed in Saudi Arabia. Working with FSIS food scientists, the military and the U.S. Postal Service, the Hotline issued

packing and mailing guidelines which were widely reprinted and aired. Once again, the Hotline had successfully met a major consumer need for help.

Consumers with food safety questions should call the Hotline at 1-800-535-4555, weekdays, 10 to 4 E.T. Washington, D.C. area residents should call 202-447-3333.

—Linda Burkholder

Campylobacter Control

Campylobacter jejuni, it's not exactly a household name, yet these bacterial cells may be responsible for more cases of foodborne illness than salmonella.

On the positive side, *Campylobacter* is somewhat less threatening than salmonella as it's easier to control with safe cooking and cold storage.

According to Duc Vugia, M.D., a medical epidemiologist with the Enteric Disease Division of the Centers for Disease Control (CDC), there has been an increase in foodborne illness due to *C. jejuni* from 1982 to 1987, the most recent period for which data is available. According to Dr. Vugia, some of this increase may be the result of more laboratory testing as well as the development of better techniques to isolate the bacteria.

Symptoms of campylobacteriosis—the illness—include fever, headache, and muscle pain followed by diarrhea (sometimes containing blood), abdominal pain and nausea.

Symptoms normally develop within 2-5 days after eating contaminated food. While most people recover quickly, some individuals may be ill for longer periods, and apparent recovery can be followed by a relapse.

How can you become ill with *Campylobacter*? *C. jejuni* is a normal inhabitant of the gastrointestinal tract of many animals, including chickens, turkey, cattle, and swine. As raw meat and poultry are processed, the bacteria can be spread from the intes-

tines to the flesh or meat of the animal. If the meat is not thoroughly cooked, the bacteria can survive and illness may result. *Campylobacter* is also found in raw milk and unpurified water.

How can you prevent *Campylobacter* infections?

1. Thoroughly cook all raw poultry, meats and seafood. Interestingly, the number of cases of *Campylobacter* infections tend to increase from May through October—prime barbecue season. Researchers at the CDC theorize that undercooking may be one of the reasons.

2. Do not use the same plates or utensils for the cooked meat or poultry that were used for the raw products unless they have been thoroughly cleaned with hot soapy water.

3. Do not allow raw meat or poultry juices to come in contact with any other foods. For example, raw juices that come into contact with fresh fruits or vegetables can set the stage for foodborne illness.

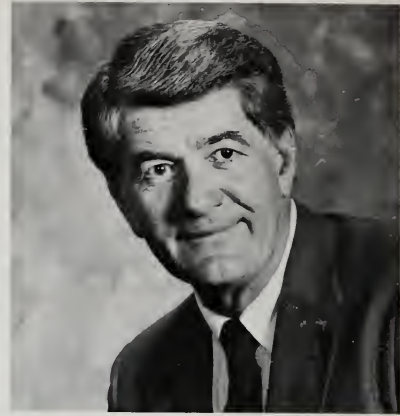
4. Avoid raw milk and untreated water.

5. Practice good personal hygiene and overall kitchen sanitation.

What is the United States Department of Agriculture doing to decrease the incidence of *Campylobacter* infection? At USDA's Russell Research Center in Athens, Ga., Dr. Norman Stern and his microbiology team are working on ways to reduce or eliminate the presence of *Campylobacter* bacteria in chickens. His research includes changing the diets of chickens and raising breeds of chicken that are more resistant to this bacteria.

For more information on safe food handling and the prevention of foodborne illness, contact USDA's Meat and Poultry Hotline at 1-800-535-4555. Washington, D.C. area residents call 202-447-3333.

—Pat Moriarty



New USDA Secretary Madigan Calls Food Safety a Top Priority

Edward Madigan, the new Secretary of the U.S. Department of Agriculture, plans to make food safety one of his top priorities.

An experienced agricultural policy-maker, Secretary Madigan is sensitive to producer and consumer concerns in the food safety area.

Prior to his appointment, Madigan spent 16 of his 18 years in Congress on the House Agriculture Committee. For the last eight years, he was the ranking Republican on the committee.

In that role, Madigan was instrumental in shaping both the 1985 and 1990 farm bills, the federal law which sets national agricultural policy for five-year periods.

Known as a coalition builder and a skillful architect of legislation, Madigan is expected to be particularly effective in dealing with the nation's farmers, consumers and rural towns, groups strongly impacted by agricultural policy.

Madigan is also expected to be active in protecting and expanding American agricultural markets abroad.

Madigan, 55 and the former Congressional Representative from a predominately agricultural area of Illinois, replaced Clayton Yeutter as head of USDA on March 12, 1991.

—Mary Ann Parmley

ENFORCEMENT ACTIONS

The Food Safety and Inspection Service (FSIS) Compliance Program investigates violations of federal meat and poultry inspection laws. Those products found in violation can be seized, detained or voluntarily recalled. These include products with false or misleading labeling information or those found to contain ingredients not listed on the label. Companies that violate the law are subject to criminal, administrative or civil actions. Here are some recent actions:

PRODUCT: Beef Patty Mix.

COMPANY: Campion Wholesale Meats, Inc.,
St. Paul, Minn.

ACTION: Withdrawal of meat inspection services for one year if the company violates provisions of a consent order.

VIOLATION: Removing labels on 5,500 pounds of "beef patty mix" and relabeling the product as "ground beef."

PRODUCT: Various meat products.

COMPANY: M&M Foods,
California Food Distributing and General Provisions,
Los Angeles, Calif..

ACTION: Owner fined \$100,000 and placed on three years probation.

VIOLATION: Causing meat food products to become adulterated by rodent feces, hair and gnaw marks.

PRODUCT: Pork, poultry products.

COMPANY: Melbur Provision, Inc.,
Brooklyn, N.Y.

ACTION: Firm and president fined \$10,000 each.

VIOLATION: Transporting and distributing 2,000 pounds of pork products contaminated by rodent feces and gnaw marks and allowing poultry products to become rodent adulterated.

PRODUCT: Pork trimmings.

COMPANY: Vanden Brink Meat Co.,

Grand Rapids, Mich.
ACTION: Owner fined \$100,000.

VIOLATION: Selling misbranded meat food products, products without the mark of inspection and labeling products as inspected when in fact they were not inspected by USDA.

A Quick Consumer Guide To Safe Food Handling

*USDA's Food Safety and Inspection Service
has a new publication to help keep you
and your family safe from foodborne illness.*



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